



NEWS FROM ATAPUERCA IN ENGLISH

A selection of highlights from the previous issue



>26th EXCAVATION SEASON Team to focus on search for origins of domestication

>RESEARCHERS EXPECT TO FIND FIRST EVIDENCE OF PLANTS & ANIMALS DOMESTICATED 10,000 YEARS AGO

A team of 30 led by Carbonell and Bermúdez de Castro from the National Museum of Natural Science in Madrid, Burgos University and Rovira i Virgili University in Tarragona began work in the Atapuerca Hills in June. On 1 July they were joined by a hundred volunteers from all over Spain and several other countries.

Based at the Arlanzón Farm-School, the advance group was able to fulfil its June goals including the preparation of the upper levels of the Elephant Pit, the production of moulds and the excavation and recovery of remains from Level 10 in Gran Dolina which could not be retrieved last year, and finally, climb down the sampling shaft opened in Lookout Cave.

In July, work is proceeding in several parts of the Main Cave complex (Bear Claw Cavity, the Porch and Bones Pit). The base of Elephant Pit will also be explored, where we expect to confirm a very early human presence in these Hills, with stone tools dating back than 1.2 million years. In the Porch, we expect to reach undisturbed Neolithic levels. The recovery of human remains from the Bones Pit and their probably discovery in the Bear Claw Cavity should round off our expectations.

>EDITORIAL

BATS, MOLES AND SHREWS: A MOUSE-EYE VIEW OF ATAPUERCA. >GLORIA CUENCA BESCÓS

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>We all know that Atapuerca was inhabited by lions, bears, long-antlered deer and even humans! But very few are aware of the tiny microvertebrates that lived alongside our forebears in the Atapuerca Hills.

Like moles, shrews, amphibians, birds and reptiles, they are not necessarily microscopic but their bones are too small to be detected during excavations and studied by the naked eye. No human eye is able to detect

the hundreds of micro-mammal bones measuring less than a centimetre that lie alongside "macro" items like stone tools and human bones. Microvertebrate analysis requires optical and scan microscopes, and to dig them up you first have to collect them by washing and sieving, which we do during the digging season.

>These items are found at Atapuerca because nocturnal birds of prey that feed on microvertebrates can collect hundreds of thousands of microskeletons at the cave entrances. Afterwards, erosion and water flush them into the caves, where they fossilise. Because nocturnal raptors feed on the most abundant species of each season, we can assume that the microfossils at Atapuerca are a good representation of the microvertebrates that coexisted with humans during the Pleistocene.

>Microvertebrates are important because they help us know the age of the sites and the climate. Rodents, for example, are mammals that evolved quickly during the Pleistocene (the last two million years), which is why some experts call them palaeontologists' "vinegar flies". By studying the range of species in a sample, we can determine their age because the association has a limited time distribution. We know that some rodents from Elephant Pit are over a million years old.

>Microfauna also help us reconstruct the climate and the landscape. Some species lived in forests, others on moist or dry plains, and others needed water or caves, regardless of the climate. The trends in their associations are an indication of climate change. In Dolina, for example, we count the number of individuals from each species and we see how their proportions evolve over time. At TD5 and TD6, we see that there is a great diversity and that species from forests, wet meadows and water are abundant, so we deduce that the climate was relatively stable, warm and moist (apart from a few cold peaks at the top of TD5 and TD6. So we are talking about an interglacial period. At Dolina 10 and 11, on the other hand, there is a majority presence of just one species of open

pasture mole, which indicates that the climate was severe - a glacial period.

>At present we are studying the water shrew in Dolina and Elephant to discover whether these micromammals can tell us something more about the amount of water in the Hills during the Pleistocene.

1.5 M YEAR OLD TOOLS IN ELEPHANT PIT?

>HUMAN REMAINS IN BEAR CLAW CAVITY AND MESOLITHIC LEVELS IN LOOKOUT are the main discoveries expected from this year's digging season in the Atapuerca Hills. Experts are also confident of finding confirmation of very early occupation of the caves in Elephant Pit, along with more human fossils in Bones Pit.

FIRST DISCOVERIES > The first important 2003 discovery was unearthed in

the period when communities began to domesticate animals and dominate the technique of plant seed selection.

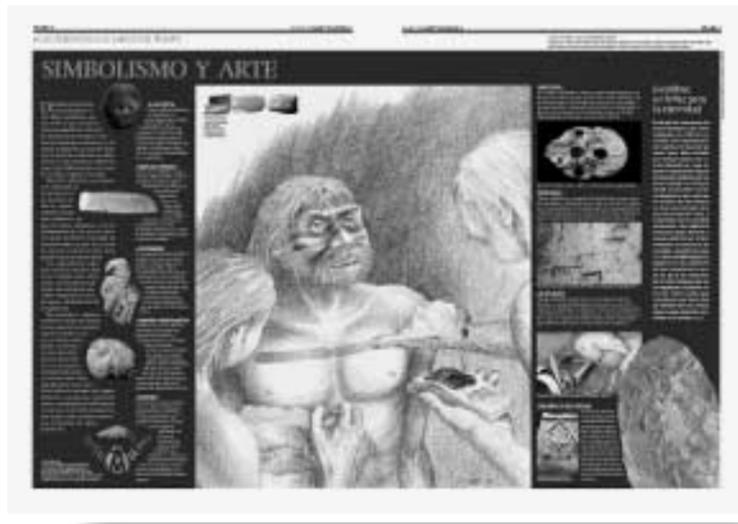
MAIN CAVE > In July, work continued in Porch Cave in an effort to make further progress on research into Neolithic and Bronze Age levels. Documentation of the cave art in each gallery is also expected to be completed, including links between the figures on the walls and the tools and other products left on the cave floor, as well as Carbon 14 dating. The Bones Pit is expected to yield more Homo Heidelbergensis remains and confirm that the quartzite tool presented last year is not associated with any other tools.

BEAR CLAW CAVITY > July also marked the start of excavation in this small sec-



MOULDS FOR MUSEUM OF HUMAN EVOLUTION

>On of the first tasks in June was the production of moulds of the excavation areas. These moulds will be used to display and illustrate how the areas occupied by prehistoric human groups are found. Expert restorers Gala Gómez and Lucía López-Polín are currently working on a mould of a small section of Level 10 in Gran Dolina, which contains masses of



early June: a sandstone cleaver found in Elephant Pit. This highly sophisticated tool, of African origin like the biface, was used to cut up animals. It has a large edge that was used as a cleaver to cut up large masses of flesh and break joints apart. Remains of primitive horses have also been found in Elephant Pit with their hoof bones in anatomical articulation. This suggests rapid burial and therefore a high likelihood that the remains have been preserved in a good state. Several dozen tools have been found in Gran Dolina, all from levels that could not be completely explored last year.

LOOKOUT CAVE SAMPLE

Sampling in Lookout Cave has reached the -5 metre level. Once again, the walls have had to be shored up to prevent rockfalls. Only three people can work at the foot of the sampling area at one time, making it necessary to work here for three months if any effective progress is to be made. The expectations of the team working at Lookout include the discovery of Mesolithic le-

tion of the Gallery-Three Pits complex, where we are trying to define how human and carnivore occupations came to alternate with each other. We also began to search for and possibly operate on the old entrances that existed during the Pleistocene. We know that humans did not enter through the present Gallery opening. There was a sloping duct that linked the whole area with the upper part of the Railway Cutting, and other side entrances probably existed as well.

We have high hopes of finding further human remains at this site - the only part of the cutting that has yielded them to date.

ELEPHANT PIT > The low part of this site, more than a million years old, will continue to be dug at levels that have yielded several tool pieces and numerous bone fragments, mainly of bears, and small carnivores. This is expected to confirm early human occupation of the Hills and verify the existence of fertile levels below.

stone tools and bones consumed and discarded by different carnivores. The restorers, joined by archaeologist Loli García, first consolidate the surface with Paraloid to make it more solid. Then they impregnate it with Vaseline to help detach the silicon layer on top without damaging the objects. A fibreglass counter-mould is then created to allow a series of reproductions to be manufactured and exhibited for educational purposes at different museums at the same time.

All of the great museums in the world exhibit moulds of objects and occupation levels. In the light of the firm commitment to build the Museum of Human Evolution in Burgos, we will need to produce these moulds on a regular basis, knowing that they will all be useful.

ELECTRONIC AGENDA REPLACES PAPER AT ATAPUERCA

>The agenda, designed by IBM for the Atapuerca sites and tested during the 2002 excavation season, is now being used exclusively in Gran Dolina. Archaeologists have stop-

ped using paper for their notes on the coordinates and description of each fossil and tool discovered during excavation. Instead, they use PDAs (Personal Digital Agendas) to note every detail. All of the spatial references of the discoveries are recorded instantly and fed into a central computer that collates all this information from every archaeologist on the site and allows it to be shared.

In addition, an electronic labelling system ensures that all the details of the objects are printed on sticky labels which are then stored with the items.

The pioneering design of this system is a world first. It reduces the time spent on collating and verifying the details, and we expect it to be applied at all of the Atapuerca sites in the near future, as well as at the sites being explored by the research team in Extremadura and Catalonia next year. The first few days of June were spent by the veteran members of the team resolving the initial weak points and getting ready to explain the system to the students who joined the group in July.

>ATAPUERCA & BURGOS MAHOU-SAN MIGUEL GROUP AND BURGOS UNIVERSITY RELAUNCH ATAPUERCA.COM

>The Mahou-San Miguel Group and Burgos University have signed a cooperation agreement to relaunch the www.atapuerca.com web page, in the light of the considerable increase in visitor numbers noted in the last few months. The new website, which will be fully operational in early July, coinciding with the arrival of the bulk of the excavation group, is produced by members of the Burgos University research team. It is expected to become a reference point for issues relating directly to Atapuerca and also to everything that has to do with human evolution.

PROTOCOL TO BUILD NATIONAL ARCHAEOLOGICAL RESEARCH CENTRE

>Josep Pique, Minister of Science and Technology, promises Juan Vicente Herrera with backing for a project that will cost 818 million. For Bermúdez de Castro, the centre, to be located on the Human Evolution site, should house the bones and items exhumed at Atapuerca, which will require high security safes and fire-proof chambers, and also discoveries from other sites in the Region. According to Carbonell, this will be the first facility in Spain that combines the storage of research material and facilities for a team of researchers. UBU should play a

prominent role in this new centre.

PUBLIC ACTIVITIES BY ATAPUERCA FOUNDATION

>WEB SITE, PUBLISHING COMPANY, BULLETIN & SCIENCE WORKSHOPS. The Atapuerca Foundation is taking firm steps to consolidate its vital role in the projection of research in the Atapuerca Hills. It has recently set up a Cultural Management Area which will coordinate and undertake a range of dissemination initiatives. June marked the start of its line of publications with a book, Sierra de Atapuerca: un viaje a nuestros orígenes (Atapuerca Hills: a journey into our origins), the celebration of the European Year of the Disabled, the organisation of several exhibitions, a new bulletin sent by e-mail to subscribers. The Foundation has strengthened its Internet presence with a new bilingual website, www.fundacionatapuerca.com, which publishes all the current information about the cultural activities of the Foundation, progress being made on research and the sponsorship and patronage system accessible to all individuals and companies. An e-mail address has been created for those who want more information: informacion@fundacionatapuerca.es

>NEW YORK EXHIBITION CONSOLIDATES ATAPUERCA PROJECT

PERMANENT COOPERATION BETWEEN NEW YORK MUSEUM AND MHE EXPECTED >After three months at the New York Museum of Natural History, the First Europeans: Treasures from the Atapuerca Hills exhibition closed on April 13. The massive influx of visitors, the impact in all-important US media including NBC, CNN and the New York Times and the high quality of not only the items on display, but also the overall presentation have led the event to be described as an unqualified success. One of the major upshots of this was the offer to take the exhibits on a tour of other major US cities, however prudence advised their return 'home' to the Burgos Museum, where a special exhibition for visitors is planned to be installed until the MHE opens.

The Atapuerca project has been clearly consolidated by the New York experience, and the Castilla y León Regional Government aims to use its initial contacts to establish a permanent line of collaboration between the New York Museum and the future Museum of Human Evolution in order to profit from its experience in this type of event.